Meeting Summary

Day 1: August 16, 2012

1. Welcome and Introductions

The meeting was called to order at 9:01 a.m., August 16, 2012, by the Chair of the Delta Independent Science Board (ISB or the Board), Dr. Richard Norgaard. Six members of the Board were present: Brian Atwater, Elizabeth Canuel, Tracy Collier, Edward Houde, Richard Norgaard, and John Wiens. Two members were absent: Judy Meyer and Jeffrey Mount. One member, Vince Resh, participated via telephone as a member of the public.

None of the Delta ISB members made any new disclosures.

Delta Science Program (DSP) Staff in attendance: Peter Goodwin, Lauren Hastings, Marina Brand, and Joanne Vinton.

2. Appoint Board Members to Two-member Committees for the Purpose of Reviewing Delta Habitat Restoration Programs (Action Item)

Norgaard appointed Board members to the following two-member subcommittees to meet with staff from the California Department of Water Resources and the California Department of Fish and Game:

- Department of Water Resources, Division of Environmental Services – Canuel and Norgaard
- Department of Water Resources, FloodSAFE Environmental Stewardship and Statewide Resources Office (FESSRO) – Atwater and Wiens
- Department of Fish and Game, Ecosystem Restoration and Fisheries – Collier and Houde

3. State Agency Habitat Restoration Efforts

During its July 9-10 meeting, the Board decided to approach reviews of science programs in the Delta by grouping programs by key themes. The first thematic review will focus on habitat restoration activities and on how adaptive management and climate change are incorporated into these activities. The review process that the Board is developing may change over time in response to what they learn. Board members want to be sure that the process is constructive, efficient, useful for the agencies, and produces valuable outcomes.

The following panel of managers discussed their programs:

- **Dean Messer**, Chief of the Division of Environmental Services (DES), Department of Water Resources (DWR) – The restoration programs in this division are:
  - Environmental Compliance – The National Marine Fisheries Service (NMFS) biological opinion and the U.S. Fish and Wildlife Service (USFWS) biological opinion require 8000 acres to be restored for delta smelt and up to 20,000 acres to be restored for salmon. These projects are just beginning.
  - Suisun Marsh – Three or four separate properties are being restored at this time.

- Fish Restoration Program Agreement (FRPA) – This agreement is being coordinated with the Department of Fish and Game (DFG). The restoration portion of this project is small.
- Bay Delta Conservation Plan – This plan requires restoration of 65,000 acres of tidal wetlands.

Recently, DES developed a Memorandum of Understanding with the State and Federal Contractors Water Agency (SFCWA). Under this agreement, SFCWA and DWR will work together to identify and restore parcels.

DES was not involved in restoring wetlands until recently, so Messer hopes the legislature will allow the Division to add staff positions.

- **Gail Newton**, Chief of the FloodSAFE Environmental Stewardship and Statewide Resources Office (FESSRO), DWR – The restoration programs in this division are:
  - Delta Levees and Environmental Engineering – This program requires enhancement of habitat in the Delta on non-project levees. The projects have mostly been small, but some are large-scale.
  - Floodway Ecosystem Sustainability (the Conservation Strategy portion of the Central Valley Flood Protection Plan) – The priority is on integrated projects with multiple benefits throughout the Central Valley with an emphasis on project levees which extend into the Delta.
  - Fish Passage Improvement

  Projects include Dutch Slough (1200 acres of tidal restoration), McCormack-Williamson (also known as North Delta, 1200 acres, tidal floodplain and riparian), Sherman Island setback (completed), Chevron Island, Bradford Island, Marsh Creek, and other unnamed projects, some of which are focused on carbon sequestration and subsidence reversal using a special genetic variation of rice. The actual work is done by the Reclamation Districts with cost-share funding from DWR.

- **Carl Wilcox**, Department of Fish and Game (DFG)

  DFG has been doing restoration work since the 1970s. Recently, DFG started to restore coastal wetlands in southern California and the San Francisco Bay area as well as state-wide salmon restoration programs that have built-in review mechanisms. DFG also sponsors stream restoration through grant programs. DFG grants are starting to focus on specific restoration areas, and the most recent request for proposals targeted the Delta. Most work is done collaboratively with other agencies, such as:

  - FRPA: the partner is DWR
  - South Bay salt ponds project: the partners are the California Coastal Conservancy, USFWS, and U.S. Geological Survey, which is helping with the adaptive management plan and a research program
  - Suisun Marsh restoration: the partners are USFWS, U.S. Bureau of Reclamation, DWR, and others

  Other projects are:

  - Liberty Island restoration
  - Hill Slough restoration
  - Calhoun Cut restoration

  DFG has helped to restore about 15,000 acres so far, mostly in former salt ponds and reclaimed agricultural lands. Restoration has to be balanced with the needs of

shorebirds. Most of what DFG does is guided by conservation strategies, such as the Baylands Ecosystem Habitat Goals (which are currently being updated to include climate change) and Stage 2 of the Ecosystem Restoration Program. The restoration program includes evaluation of how well the projects are working.

DFG developed an elevation map (incorporated into Chapter 4 of the Delta Plan) that shows where restoration projects will be most effective in accommodating sea level rise. DFG also uses the conceptual models developed as part of the Delta Regional Ecosystem Restoration Plan (DRERIP) prepared under CALFED. These models have been used to evaluate the Bay Delta Conservation Plan (BDCP) and other projects, and to target funds for research.

DFG has a climate change program that provides assistance to other programs. Salmon management is a particular concern.

- **Campbell Ingram**, Sacramento-San Joaquin Delta Conservancy

  The Conservancy's role is to be one of the lead agencies for ecosystem restoration in the Delta, along with DFG, DWR, and other agencies. It is also responsible for economic development in the Delta.

  The Conservancy is governed by a 23-member board including 11 voting members, two non-voting members, and 10 liaison advisors. The Delta Protection Commission is the only voting state agency on the Conservancy Board.

  The Conservancy is currently not funded to undertake projects (staffing is fully funded), so restoration work is not being done at this time. However, staff are preparing for restoration in the following ways: 1) by developing early restoration programs that focus on habitat enhancement on agricultural lands (e.g., working landscapes), 2) by looking for opportunities to control invasive species, and 3) by developing a strategic plan.

  The Conservancy will include the local Delta community in restoration planning, along with state and federal agencies and would like to form a Restoration Network to facilitate restoration in the Delta. Important issues are how to track progress towards objectives, how to synthesize information for hundreds of projects, and how to integrate many agencies into a cohesive restoration effort. The goal is to develop an overarching plan that shows where, what, how and when restoration projects would be implemented. They will also be thinking about the cultural changes that will be needed to increase restoration opportunities.

The panel discussed how science that informs the restoration efforts could be integrated and coordinated. Existing science frameworks, such as the Delta Science Program and the Delta ISB, need to be incorporated into BDCP and possibly expanded. The Interagency Ecological Program (IEP) needs to hire more people. More funding is needed for research. Most research funding comes only from grant programs with a little from bonds.

FESSRO project partners include universities and a small set of consultants. The exchange of scientific information is informal, occurring as a result of specific projects and occasional meetings. Larger projects may include scientific advisory groups but an overarching science program would provide a greater benefit. The universities often provide external, technical oversight of projects at no cost, but evaluation of the outcome (e.g., data synthesis) of projects is missing.

IEP has several project work teams, which are focused on specific issues, such as the Steelhead Project Work Team. The teams exchange information and ideas. IEP should perhaps make the teams more formal and give them more direction. Conferences, such as the IEP

Workshop, the Bay-Delta Science Conference, and the State of the Estuary Conference help staff stay current and share information.

Regulations require some monitoring of all projects and an assessment of whether or not objectives were met. Either consultants or the agency that built the project collect the monitoring and assessment data rather than independent third parties. Monitoring is usually limited to three to five years and is specific to the project. In the future, monitoring and objectives need to be standardized. For example, the number of acres of *Spartina* produced is not as important as whether or not the habitat is functioning as it should. Habitat will always be changing, especially as the climate warms and sea level rises.

FESSRO is evaluating previous small-scale restoration projects to find habitat linkages among them and to identify suitable locations for future habitat restoration projects. However, there may be only a few areas of the Delta where restoration could take place and be successful. They have also looked beyond the Delta to identify where the ecological functions would be if man-made structures were not present.

The panel discussed the value of planning and finding time to write strategic plans for restoration. DFG outlines broad strategies and identifies priorities but does not formalize them in a strategic plan. It is also difficult because of the multi-agency and collaborative aspects of the work. DWR has strategic plans for funding and the levee program and numerous other documents that outline goals and priorities.

The panel also discussed how results of projects are communicated to others: through conferences, meetings, and symposia. These are effective for coworkers, but a better job could be done to educate the public. The Delta Conservancy might be a good partner in helping to communicate to the public. An important idea for the public to understand is that it is not flood protection, etc. versus habitat. It is about the connection/integration of habitat to other issues such as flood control. For example, expanding river bypasses (such as the Yolo Bypass) can include habitat restoration, without reducing the flood protection benefit.

The factor(s) that slow projects are unique to each and geographically based. The overarching issues include existing infrastructure (either overhead or underground), expensive and extensive monitoring required for the methylmercury TMDL (required by the State Water Resources Control Board), permits that require compliance with the California Environmental Quality Act, concerns of neighbors regarding ESA species, funding that is constrained with respect to how the money can be used, and other issues that are unique to each project area. DWR is trying to do advance mitigation at a programmatic level but this approach is opposite to how regulatory agencies typically operate.

4. Federal Agency Habitat Restoration Efforts

This agenda item was postponed until the November ISB meeting to accommodate the schedules of federal agency managers.

5. Public Comment (For matters that were not on the agenda, but within subject matter jurisdiction of the Delta ISB.)

Mark Rentz, Association of California Water Agencies – Rentz said that the meeting was valuable, but one issue was missing: how the agencies define a successful restoration project in three contexts: biological, under the Endangered Species Act, and under Habitat Conservation Plans and Natural Community Conservation Plans. Rentz also said that coordination, facilitation and integration of science programs are critical roles for the Delta Stewardship Council.

11:45 a.m. – Adjourn

Day 2: August 17, 2012

1. Welcome

The meeting was called to order at 9:01 a.m., August 17, 2012, by the Chair of the Delta Independent Science Board (ISB or the Board), Dr. Richard Norgaard. Six members of the Board were present: Brian Atwater, Elizabeth Canuel, Tracy Collier, Edward Houde, Richard Norgaard, and John Wiens. Two members were absent: Judy Meyer and Jeffrey Mount. One member, Vince Resh, participated via telephone as a member of the public.

None of the Delta ISB members made any new disclosures.

Delta Science Program (DSP) Staff in attendance: Peter Goodwin, Lauren Hastings, Marina Brand, and Joanne Vinton.

2. Delta ISB Chair's Report – Dick Norgaard

In June, the Board sent a memo to Jerry Meral, Deputy Secretary, California Natural Resources Agency, and Dale Hoffman-Floerke, Deputy Director, Delta and Statewide Water Management, California Department of Water Resources, titled "Initial Recommendations for Integrating BDCP Science and for Improving the Reviewability of Draft BDCP Documents." Norgaard received a reply from Meral, who wrote that he shares the desire to structure the BDCP science program to build collaboration, consensus and trust in Delta science and he recognizes the need to integrate, as well as coordinate, with existing DSP and IEP efforts. With respect to chapter summaries, they are still considering the best way to provide a user-friendly version where key points and conclusions can be readily found. Meral suggested that he and Norgaard meet in the near future to further discuss the issues.

Norgaard met with Alf Brandt, who is the principal consultant to the Assembly Committee on Water, Parks, and Wildlife, and helped write the legislation that created the Delta ISB. Norgaard asked Brandt if Board members' five-year terms could be staggered. Brandt said that the intent of the legislation was to allow for staggered terms. Brandt said that he would contact the Delta Stewardship Council's (DSC) legal counsel to discuss it as he does not believe that a legislative fix is necessary. Norgaard also asked Brandt to clarify the legislation's requirement to review the scientific research, monitoring, and assessment programs in the Delta that support adaptive management. Brandt said that the Board is not required to review every program. The intent is to encourage program managers to incorporate adaptive management into their programs. Brandt approved of the Board's approach to their reviews.

Norgaard encouraged Board members to attend the 7th Biennial Bay-Delta Science Conference 2012 in October.

3. Lead Scientist's Report – Peter Goodwin

Goodwin passed around a brochure about Water Education Foundation tours. The tours include trips to water facilities, rivers, and regions that are important in the debate about the future of water resources.

The recipients of the first 2012 Delta Science Fellowships will be announced at the next DSC meeting. The DSP will announce another solicitation for a 2013 class of Science Fellows in the next four to five weeks.

The State Water Resources Control Board is holding three workshops related to their comprehensive review and update to the Bay-Delta Plan. The DSP is helping to organize some of the workshops' panels.

The DSP has been developing a strategic plan. Three of the Board members will review a draft of the plan during the next few months.

In March, Mike Healey resigned from the Board for personal reasons. At the end of October, another Board member, Jeff Mount, will also need to resign due to potential conflicts resulting from his retirement from the University of California, Davis and future role as a consultant. New members will be chosen from the pool of candidates that applied for Mike Healey's vacancy. The nominees are Dr. Jay Lund to replace Mount and Dr. Harindra (Joe) Fernando to replace Healey. The DSC will decide on the appointments at their August Council meeting.

4. Non-governmental Agency Habitat Restoration Efforts

This discussion with managers of non-governmental agencies continues the Board's review of habitat restoration programs in the Delta (see agenda item 3 on page 1). Each manager presented an overview of restoration projects, and then answered the Board's questions.

- State and Federal Contractors Water Agency (SFCWA) – Byron Buck

  SFCWA is a joint powers authority that was created in part to restore habitat, as required by the National Marine Fisheries Service (NMFS) biological opinion and the U.S. Fish and Wildlife Service (USFWS) biological opinion. SFCWA also has its own science program.

  SFCWA is working on two restoration projects: Lower Yolo and Tule Red in Suisun Marsh. Design and implementation of the projects can be difficult—channels need to be planned and millions of cubic yards of fill might need to be removed. Moving fill is very expensive. The total cost of these projects is about $20,000 per acre to buy and restore the land. Permitting costs are generally equivalent regardless of parcel size.

  SFCWA has an agreement with NMFS and USFWS, which explains how SFCWA should propose projects required by the biological opinions and how many credits the projects will earn.

- The Nature Conservancy (TNC) – Jaymee Marty

  Marty described The Nature Conservancy's two restoration projects in the Delta: one within the Cosumnes River Preserve and the other at the McCormack-Williamson Tract. Monitoring will be long-term. U.C. Davis and the Point Reyes Bird Observatory are partners. Grants from DFG are used to pay the partners.

  Barriers to project implementation are buying land, waiting for permits, the cost of permits, and liability when breaching levees. Restoration projects require long-term, institutional commitment.

Discussion

The following summarizes responses to questions posed by various Delta ISB members.

Land ownership and conservation easements

SFCWA: The Lower Yolo site was purchased by a member agency. Twelve hundred of the total 8,000 acres will be restored, and SFCWA will hold an easement. The remainder of the site will be kept as a working ranch. SFCWA hopes to turn over the site to the Delta Conservancy or DFG for long-term maintenance. Easements are a tool, but it is best to own the land. The amount of property to be restored is determined by regulatory requirements including the biological opinions and what will be necessary to implement an approved BDCP.

TNC: Easements are difficult because they come with restrictions but do not prescribe the type of habitat restoration.

Choosing restoration sites

TNC: An overarching picture with needs and tradeoffs among species is missing; for example, how restoration for fish will affect birds. It is important to think about goals for habitat quality and not just quantity. The size of a site is less important than how well it connects to other restoration sites.

SFCWA: The CALFED Environmental Restoration Program (ERP) did a lot of work on choosing restoration sites, and that work is being carried forward by BDCP and the biological opinions. When looking for land to buy, SFCWA considers elevation, size (larger is preferred), sediment transport, and availability of uplands to accommodate sea level rise. After restoration, SFCWA prefers to turn the land over to another entity for maintenance.

Restoration experiments

SFCWA: At the Lower Yolo Project, five areas will be restored differently to learn about what works best.

TNC: At the Cosumnes River project near Twin Cities Road, levees will be breached to allow a former agricultural basin to flood more frequently and to drain after flooding. Restoration will be done as an experiment by setting up three areas with three different levels of effort (no plantings, trees only, and trees and understory plants). What is learned can be implemented on a larger scale.

Sharing information about restoration projects

TNC: U.C. Davis maintains a website for the Cosumnes Research Groups. Outreach is important, including field trips for schools. The public needs to understand the importance of floodplains in the face of climate change.

SFCWA: No publicly available website exists to share information about their restoration projects. However, an agreement between SFCWA and DWR includes monthly meetings and discussions about the best places for restoration projects. DFG also participates in some of the meetings. In addition, a larger habitat coordination committee, which includes all agencies, meets periodically to talk about restoration projects. Information sharing could be organized by the Delta Conservancy.

Climate change

SFCWA: Water temperature is a big issue for salmon. When considering higher flows from reservoirs, agencies need to be careful about depleting the cold water pools. Regarding warming water in the Delta, research is showing that proper design of a project allows for radiative cooling of water in the Delta, which will benefit delta smelt.

TNC: For TNC projects, climate change considerations include sea level rise and sediment only.

Monitoring

TNC: TNC has received ERP funds through DFG to monitor sites for five years, but more funds are needed to monitor for additional years and to make the data available to others. TNC does not have a program yet to fund an endowment for monitoring.

SFCWA: Monitoring is part of the cost of a project. Water contractors need to know if the restoration is working to recover species. Monitoring costs will be built into the revenue

stream. Monitoring programs for Lower Yolo and Tule Red are being planned with other agencies. Dr. Val Connor described tools that SFCWA will use for monitoring:

- Wetland Tracker to map wetlands
- California Rapid Assessment Method to rank wetlands based on diversity indices
- EcoAtlas to evaluate wetland condition

Recovery goals

SFCWA: Only restoration actions can be guaranteed, not outcomes. There does not seem to be a unified approach from federal or state agencies on how to recover the fish. Tough choices will need to be made.

TNC: Agencies need to be thoughtful about the early restoration projects and the need to use adaptive management.

Public Comment

Burt Wilson, Public Water News Service – Wilson asked if increased diversions from the Sacramento River affect habitat restoration in Yolo County or in Suisun Marsh. He also asked if the Yolo restoration project benefits Westlands Water District financially. Norgaard replied that these issues had not been addressed by the Board and therefore, he could not respond to them. Next, Wilson asked for an explanation of adaptive management. Norgaard referred him to the Delta Plan as it contains a good description of adaptive management.

5. Reports from Delta ISB Site Visits and Discussion

During the afternoon of August 16, the Board met in two-member subcommittees with staff from DWR and DFG (see agenda item 2 on page 1). Each subcommittee briefly reported what they learned during the meetings, and agreed to write a summary of what was learned and share it with the rest of the Board.

Collier and Houde met with staff from DFG. The discussion was broad, but mostly about restoration. DFG collaborates with DWR on restoration projects and receives funding from that agency. DFG's role is to advise, not to actually do the restoration work, but they have developed performance measures for restoration projects. They are thinking about climate change, but are not yet acting on it. Staff do not do science, but the agency promotes and funds science. Staff would like to bring science back into the agency.

Atwater and Wiens met with staff from FESSRO at DWR. FESSRO is a statewide operation that works mostly on levee projects, but also on restoration. FESSRO staff work with reclamation district staff, who do the physical work. Projects include wetlands restoration, experiments with rice crops to reverse subsidence, and rebuilding the middle of Sherman Island. Monitoring is required for permits, but funding is not guaranteed. The agency's focus for climate change is on carbon sequestration (e.g., mitigtion not adaptation). Staff have little time to attend conferences and no access to journals.

Canuel and Norgaard met with staff from the Division of Environmental Services at DWR. They discussed the Suisun Marsh Plan, the cost and time needed to get permits, and the tension between science and regulations. Staff are setting up an adaptive management committee for the Suisun Marsh Plan. More flexibility is needed in earning mitigation credits for projects. Consultants do most of the actual restoration work, which results in a loss of expertise for the agency.

For their November meeting, Board members will meet with federal agency managers, and will use one full day for visits to restoration sites. They will also meet with a non-governmental agency manager who could not come to today's meeting.

6. Discuss BDCP Draft EIR/EIS chapter reviews

At their July 9-10 meeting, Board members decided to briefly review specific chapters of the Administrative Draft of the BDCP Environmental Impact Report/Environmental Impact Statement (EIR/EIS) that are not likely to change significantly.

Board members said that the introduction and related appendices contain useful background and history.

The chapter on groundwater discusses effects of withdrawing water from the Delta, including effects on groundwater operations and land subsidence. The chapter considers the effects on groundwater during construction of the project tunnels and other facilities.

The chapter on water quality will require review by several Board members depending on their area of expertise and might require assistance from consultants. The chapter refers to several appendices. Some water quality topics are covered in great detail; others lack detail or are missing completely.

The chapter on fish and aquatic resources discusses many stressors and their effects on fish. The chapter lacks data; for example, the number of green sturgeon and Chinook salmon in specific watersheds.

The chapter on socioeconomics refers to several other chapters in the EIR/EIS. The chapter did not explain how socioeconomic factors affect environmental issues. It included a description, but not modeling, so socioeconomic effects were not well supported or verifiable.

Board members discussed review of the Draft EIR/EIS as opposed to review of the Bay Delta Conservation Plan. They said that review of the Conservation Plan seems more important, yet the legislation calls for review of the EIR/EIS. Norgaard will meet with Brandt to discuss this issue.

7. Discuss the Delta ISB Work Plan

Board members discussed their schedule for reviewing the BDCP and science programs in the Delta which was focused on a timeline prepared by staff. Staff was directed to include additional items.

8. Public Comment (For matters that were not on the agenda, but within subject matter jurisdiction of the Delta ISB.)

None.

9. Delta ISB Business

- Review action items

  Meyer, Mount, and Resh will review a draft of the DSP's strategic plan.

  Norgaard will continue to work on getting permission to stagger Board member's five-year terms.

  Board members will decide which Bay-Delta Science Conference sessions they will attend.

  Subcommittees will send site visit reports to staff within nine days.

  Staff will work on setting up site visits and field trips for the November meeting.

  Staff will send out a Doodle poll for 2013 Board meetings. Board members prefer Thursday-Friday meetings.

- Preparation for the Next Delta ISB Meeting

  The next meeting will be a short teleconference on September 24 to plan for attending the October Bay-Delta Science Conference. The Board will meet in-person on the day after the conference, October 19, to discuss the conference, and on November 28-30 to meet with habitat restoration program representatives from federal agencies.

2:49 p.m. – Adjourn